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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,220	10/16/2001	Tadahiko Sakai	2001_1456A	3670

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WASHINGTON, DC 20006-1021

EXAMINER

ANYA, IGWE U

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicant No.

09/977,220

Applicant(s)

SAKAI ET AL

Examiner

Igwe U. Anya

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13, 14 and 22 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 12, 15, 17-21, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 4, 10, 11 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8. 6) ☐ Other:

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. The indicated allowability of claims 18, and 19 are withdrawn in view of the newly discovered reference(s) to Nitta and Yamashita.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Nitta (US Patent 5445692).
4. Nitta teaches a wafer (7) having electrodes formed on the front surface (col. 6 line 59 – col. 7 line 7), and a reinforcement member (5) having a length greater than the length of the wafer (fig. 3) bonded to the back surface of the wafer with an adhesive (6) made of resin (col. 3 lines 55 – 64) while allowing the wafer the wafer to be deformed (col. 9 lines 44 – 52). Dicing to form single chips (col. 7 lines 5 – 7).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3, 6, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta (US Patent 5445692) in view of Yamashita (JP Patent 11126856).

8. The Nitta reference teaches the features previously outlined but lacks the adhesive bonding to only a center of the back surface of the semiconductor element to the reinforcing member, the reinforcing member functioning as a holding member in handling, and the reinforcement member having a recess portion to which the semiconductor element is bonded with a projection formed at the border of the recess portion.

9. However, regarding claim 3 a change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). Regarding claim 7, a recitation with respect to the manner in which a claimed device is intended to be employed does not differentiate the claimed device from a prior art device satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987). Regarding claims 6 and 8, Yamashita teaches a reinforcement member

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having a recess portion to which the semiconductor element is bonded with a projection formed at the border of the recess portion (fig. 1E), and an identification mark (fig. 1D element 26, & abstract) on the reinforcement member as reference point for later wafer processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings Yamashita into the Nitta reference as conventional in the art.

10. Claims 9, 12, 15, 17 – 21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta (US Patent 5445692) in view of Yamashita (JP Patent 11126856), and further in Wood et al. (US Patent 6429506).

11. Nitta/Yamashita reference teaches the features previously outlined but lacks backside shaving until the wafer thickness is less than 100 microns.

12. However, Wood et al. in fig. 3 teach backside shaving until a wafer thickness of 25 to 355 microns is achieved (col. 3 line 27 – 41).

13. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings Wood et al. into the Nitta/Yamashita reference in thin wafer technology.

14. Claims 4, 10, 11 and 16 are objected to as being dependent upon rejected claims, but would be allowable if rewritten in independent form.

15. Claims 13, 14 and 22 are allowable, because prior art do not teach attaching a sheet to an electrode-formed surface a wafer having diced grooves, backside grinding of the wafer to singulate, and bonding the singulated wafers to reinforcement plates.

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16. The examiner has reviewed prior art in light of applicant's comments and amendment and finds it persuasive as to the reading of prior art. However, the examiner has discovered new references, which can be used to reject some of the claims.

**Remarks**

17. The substitute specification of Paper is acknowledged and entered.

**Contact Information**

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Igwe U. Anya whose telephone number is (703) 308-3549. The examiner can normally be reached on M - F 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (703) 308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Igwe U. Anya  
Examiner  
Art Unit 2825

IA

December 1, 2003



MATTHEW SMITH  
SUPERVISOR OF EXAMINERS  
10/1/01 09/15/03